Multimedia Language Learning in UK Higher Education

University of Ulster

Centre for Excellence in Multimedia Language Learning

Multimedia Language Learning in Higher Education in the UK

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Introduction

Language teaching, like other areas, is facing the challenge of how to integrate digital technologies into teaching and learning in a fast-changing and rapidly-evolving world. In recent years, languages teachers have been adapting to the use of Virtual Learning Environments, websites, electronic dictionaries, podcasts, blogs, vlogs, wikis, and gaming, as well as changing media (digital replacing analogue).

Another emerging technology is the digital or multimedia language lab, a classroom management system that enables a teacher to monitor and control student computers in the classroom or even at remote locations. While these are sometimes seen as the successor to the old analogue language labs, they are in fact quite different in nature and functionality. Each student in a multimedia language lab has his/her own networked PC that opens up a suite of possibilities including use of dedicated CALL (Computer-Assisted Language Learning) packages and access to online sites in the target language including newspapers, radio stations, TV stations, dictionaries, catalogues and encyclopedias. They can play audio and video clips sent to them from the teacher's PC, answer quizzes, complete exercises set by the teacher, and return answers to the teacher for marking or comment. Teachers can monitor student progress from a central workstation and intervene where necessary. They can talk to students over a headset and take control of their keyboard and screen to demonstrate how to do something. They can broadcast their own screen to students, or pick out a student's screen and broadcast that to the whole class in order to show examples of good practice or initiate a discussion.

The Centre for Excellence in Multimedia Language Learning at the University of Ulster was established in 2005 under the Excellence in Teaching and Learning Initiative to showcase and promote best practice in multimedia teaching and learning. Very little was then known about the actual usage of technology in the language classroom in third-level institutions. This study was initiated to establish the current extent and diversity of technology usage in language teaching in the UK Higher Education sector, particularly with reference to digital labs, and to determine developmental priorities for the Centre. Teachers were asked to comment on the range of technologies and technology-assisted activities they used in their teaching. They were also asked whether they had digital labs so that we could establish the extent to which these had permeated universities and, for the sake of comparison, questions were also asked about traditional, analogue language labs and the use of technology in classrooms and lecture theatres. Other questions attempted to establish their preferred means of accomplishing particular language teaching tasks, their use of CALL, and their opinion on the efficacy of digital labs.

The questionnaire was designed by staff at the University of Ulster in collaboration with the Subject Centre for Languages, Linguistics and Area Studies at the University of Southampton. The online questionnaire was hosted by the Subject Centre and was publicised in its monthly e-bulletin. It was available online from December 2005 to January 2006 and an electronic version of the survey questions is available at http://www.arts.ulster.ac.uk/lanlit/cetl/news/LLAS/. A total of 147 responses were received, 87 from teachers working in UK universities. A total of 62 UK Higher Education establishments were represented. It must be borne in mind that the respondents are a self-selecting sample and are hardly representative of the HE sector as a whole. However, while this may serve to exaggerate the level and diversity of IT use in HE, the general trends and internal comparisons remain valid. Although those registered with the Subject Centre may, on average, be more committed to teaching innovation and enhancement than normal, the survey clearly indicates which forms of technology have caught on most readily and where problems remain.

The survey produced several interesting findings which have informed and continue to inform the work of the Centre for Excellence in Multimedia Language Learning and which will provide a baseline for future studies. Languages teachers in UK Higher Education are technologically very literate, and institutions seem to be well endowed with a range of technologies including multimedia labs. Over seventy percent of UK institutions covered by this survey have at least one digital lab. However, there is clear evidence that existing multimedia labs are not being used to their full potential as state-of-the-art teaching facilities. In some cases, labs are being used simply as ordinary classrooms with little or no use being made of the technology they offer; in other cases they may be used for supervised study rather than for teaching. There is a very high use of Computer-assisted Language Learning software (CALL) in labs, possibly for

individual study, and respondents report concerns that labs inhibit social interaction between peers and with teachers. This indicates that there needs to be an urgent debate about matters such as accessibility, layout, and software functionality, but more importantly about teaching methods that can reduce isolation and promote social interaction in this environment. The survey shows that labs are being used by a large minority of teachers to promote social learning. This good practice must be captured and disseminated. In particular, we need to explore how lab-based exercises can be integrated into teaching to enhance the student experience in the lesson and diminish fatigue which is often engendered by individual, computer-based learning. Good lab practice should be about harnessing the benefits of face-to-face teaching, peer interaction, and private, computer-assisted learning. A dynamic interlacing of these elements can promote active engagement with the subject while providing the intellectual and social support necessary for effective learning.

Acknowledgements

We would like to acknowledge the assistance of our colleagues in drawing up the questionnaire: Professor John Gillespie, Ms Karin Duffner, Mr Jonathan Leakey, Dr Caoimhín Ó Dónaill (Ulster), and Ms Liz Hudswell (Southampton).

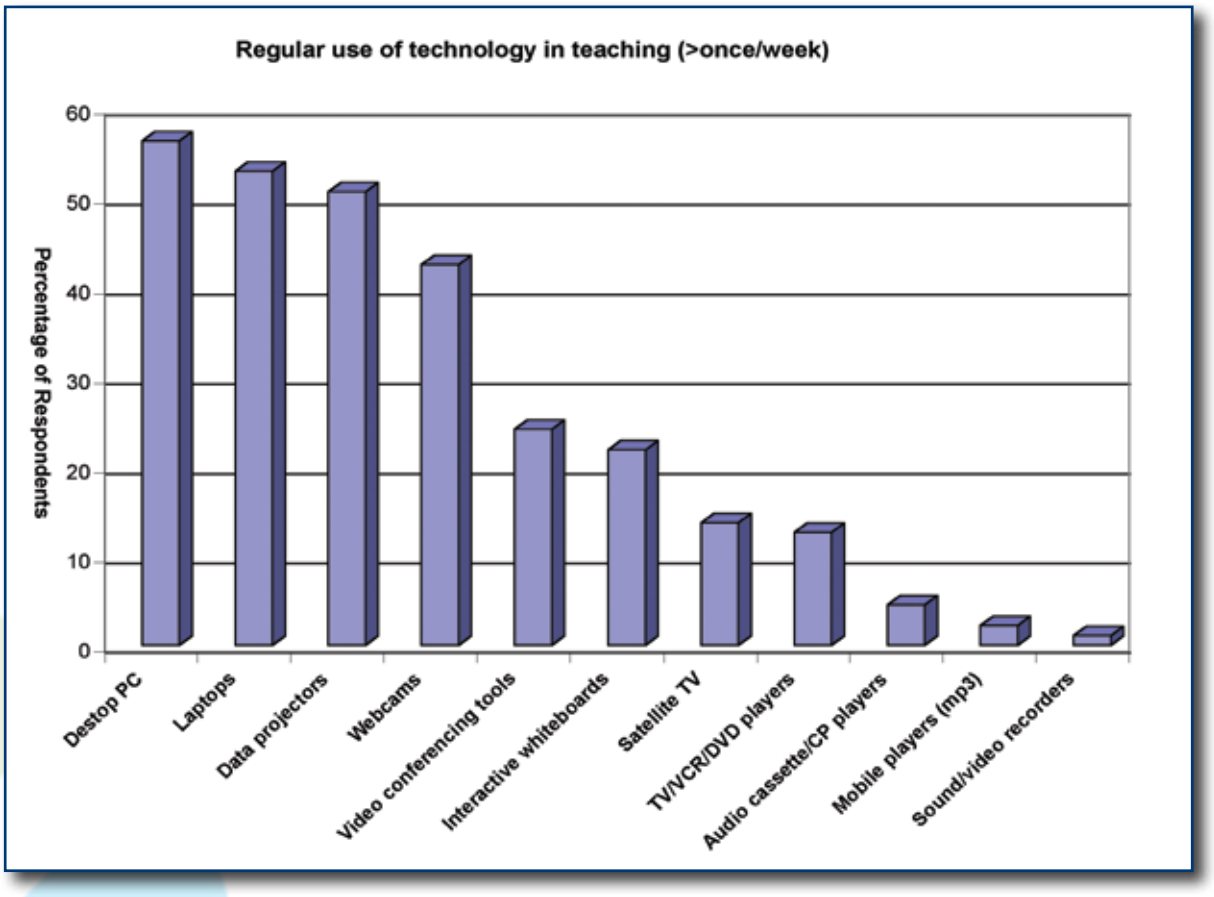
The Use of Technology in Teaching

The survey clearly demonstrates a high level of technology use among language teachers in the UK university sector. Traditional audio-visual technologies such as cassette players and VCRs are widely used in the classroom. Audio cassette players and CD players are used in classroom teaching on a regular basis by 56.3% of respondents, while 50.6% said they use VCRs and TVs regularly. Satellite TV is used regularly in their teaching by 13.7% of respondents.

These are evidently well-established technologies in the languages sector. They fulfil the immediate pedagogical need to provide frequent and copious native-speaker input in the target language to develop students' aural and oral skills, while at the same time enhancing students' intercultural awareness. They are also relatively simple technologies and are familiar to teachers in the home environment. Material is widely available in suitable formats, either from off-air recordings or from commercial and educational publishers. Most institutions probably have technicians based in the languages department that regularly make recordings, but teachers can easily make their own recordings.

The importance of familiarity is highlighted by the fact that only 4.5% of respondents reported that they use MP3 players on a regular basis in their teaching. MP3 players provide similar functionality to cassette players and CD players, and can offer increased control and sound quality. However, it is a relatively unfamiliar technology to teachers, requires the use of loudspeakers if it is to be used in the classroom, and material must be downloaded from the web or ripped from CDs.

Personal computers are now well-established in language teaching. Over half of the respondents (52.9%) use PCs in their teaching on a regular or very regular basis, and only 6.9% make never use them.



The use of PCs as an audio-visual communication tool is negligible. 80.5% of respondents said they never used webcams in teaching and 77% said they had never used video-conferencing. Virtually no one said they used these tools on a regular basis, while the remainder of respondents said they used tools only rarely or occasionally. Clearly, these technologies are not regarded as core teaching tools and where they are used it is for special events. The use of video-conferencing tools in class for tandem learning or collaborative work requires extensive planning across different institutions and countries and may involve two sets of local technicians at either end. This level of organisational complexity, coupled with potential technical failures and variable signal quality, can be both intimidating and discouraging to novices in the area. It remains to be seen whether improved quality and reliability will significantly alter attitudes to this mode of teaching.

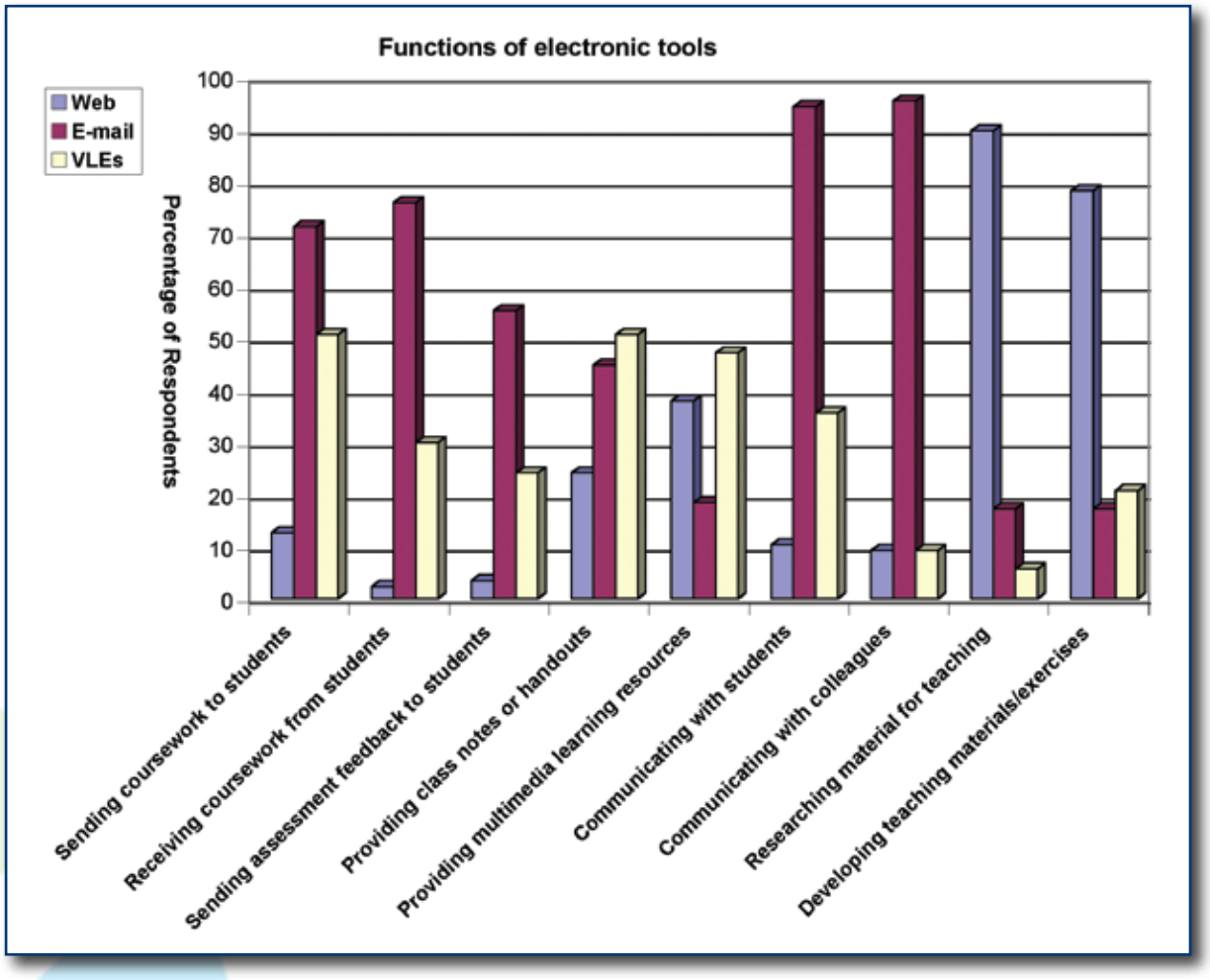
Interactive whiteboards have made a huge impact on teaching in the primary and secondary sectors in the UK but this survey reveals that universities are a long way behind. Well over half of respondents (66.7%) said they never used interactive whiteboards. Nevertheless, 13.7% said they regularly used these tools in their teaching, and a further 9.2% said they had some experience of their use or used them occasionally, so they are clearly becoming more popular.

Data projectors are in much more common use. 42.5% of respondents said they used data projectors at least once a week in their teaching, and we may assume that the traditional lecture is still prominent in languages teaching in UK universities. Only a minority said they never (13.8%) or rarely (12.6%) used data projectors, while the remainder said they used data projectors two or three times a month. This is perhaps slightly surprising in the current climate, but the relatively low frequent usage of data projectors does not necessarily indicate an aversion to technology or a lack of availability of such equipment on university campuses. Rather, it may be the case that respondents do not believe that data projectors are suitable in language-teaching classes and are more appropriate to content-based classes. In answer to another question on their use of technology in different teaching environments, over half (52.8%) responded that they rarely or never used technology in a lecture theatre which may indicate that they do not do much teaching in lecture theatres rather than they are averse to using technology such as data projectors.

Web, E-Mail and Virtual Learning Environments

Respondents were asked to identify which technologies they used for a range of teaching-related tasks. E-mail is commonly used for a variety of two-way communicative functions including sending and receiving coursework (71.3% and 75.9% respectively), sending feedback to students (55.2%), and communicating with students and colleagues. Interestingly, e-mail is used only slightly more frequently for communication with colleagues (95.4%) than with students (94.3%).

The web is used primarily for researching material for teaching (89.7%) and developing teaching and learning materials (78.2%). VLEs are used for some activities by at least half of respondents. Judging by the response to the question on e-tutoring, two fifths of these are involved in online distance teaching, and we may surmise that the remainder are using a VLE for campus-based teaching. One of the most popular uses of a VLE (50.6%) is for the distribution of coursework to students; 29.9% receive coursework through a VLE, and 24.1% provide feedback to students using the same method. It is noteworthy that almost as many respondents (47.1%) use the VLE to deliver multimedia learning resources to students as to distribute coursework, although the nature of these resources cannot be ascertained from the survey. VLEs are also commonly used for communication with students (35.6%), although markedly less so than e-mail (94.3%). Considerable use is made of VLEs (33.3%), and to a lesser extent the Web (20.7%), for asynchronous discussion forums. Synchronous chat facilities are exploited by a small but significant number of teachers, primarily through VLEs (17.2%) and, to a lesser extent, the Web (13.8%).

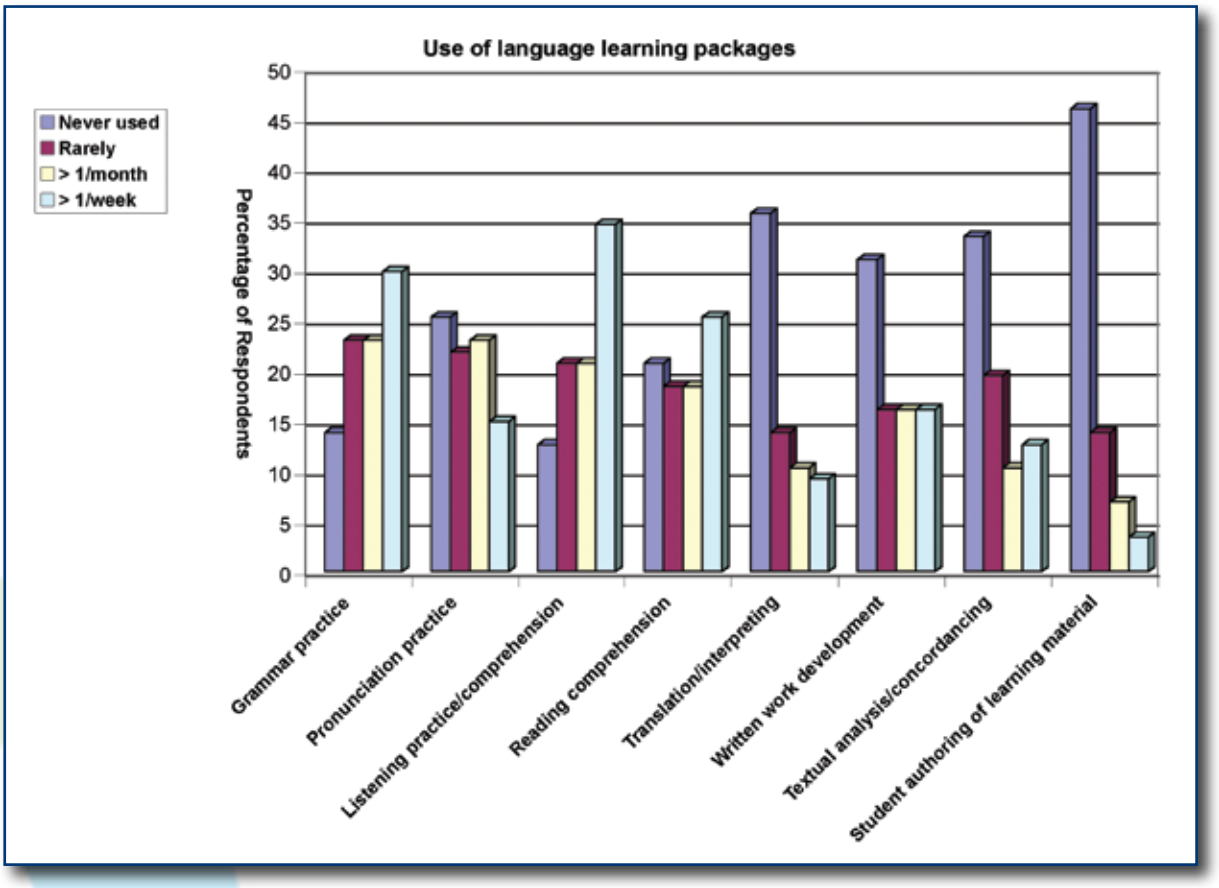


Use of Language Learning Software

The survey asked teachers to identify the frequency with which they used Computer-Assisted Language Learning (CALL) packages, either PC-based or online, for the development of a range of language skills including grammar, pronunciation, aural comprehension, and translation.

The most common uses of CALL are for practice in grammar, pronunciation, and aural and reading comprehension. The highest reported usage is for grammar practice, with 24.1% of respondents saying they use CALL for this purpose at least once a week and a further 23% using it at least once a month. The usage figures are similar for reading comprehension, with 20.7% using CALL at least once a week and a further 18.4% using it at least once a month. CALL is employed in the development of pronunciation at least once a week by 13.8% of respondents, and a large body of teachers never (25.3%) or rarely (21.8%) do. Almost a third of respondents use CALL at least once a week for listening practice/ comprehension, and comparatively few (12.6%) claimed that they never used CALL for this skill.

There is a clear difference in approach here to the acquisition of literary and oral/aural skills, with CALL being used more frequently for the former. Computers easily lend themselves to textual work, with the added advantage that exercises are generally self-marking so that students can work on them independently. However, there is no indication here that teachers ignore the development of the spoken language, and it is likely that they have developed a pragmatic approach, opting to use more conventional technologies such as cassettes, CDs, and video for the development of these skills (see above). It is noteworthy that they use CALL packages more frequently to practice aural skills than for developing pronunciation. This suggests that they are exploiting the potential of computers to set written exercises to accompany listening tasks. Unfortunately, it is not clear from the survey just how teachers are using CALL in the practice of oral skills. We can probably assume that considerable use is made of commercial packages which offer pronunciation exercises and even speech recognition, but these figures may include teachers who hope to develop pronunciation through exposure to authentic speech.



A large percentage of respondents (35.6%) report that they never use CALL for translation and interpreting, doubtless because this is a skill taught only in specialist courses or in a single module in a general language course. The majority of respondents do not use CALL for textual analysis/ concordancing, techniques that are used to direct advanced students attention to linguistic form and usage – learning through research – and while computers are ideal for some aspects of this, the packages, and even the approach, may be seen to be cumbersome and unrewarding. Asking students to develop their own language-learning software can be a good way to raise their awareness of issues relating both to the language and to learning, but this is very rarely undertaken by the respondents to this survey.

Approximately 11% of respondents in the survey say that they develop writing skills using CALL at least once a week, and a further 16.1% at least once a month. Unfortunately, it is unclear from the survey exactly what they mean by the development of writing skills. It is unlikely that the respondents had higher order writing skills in mind, and the question may have been interpreted as relating to the development of grammar or spelling.

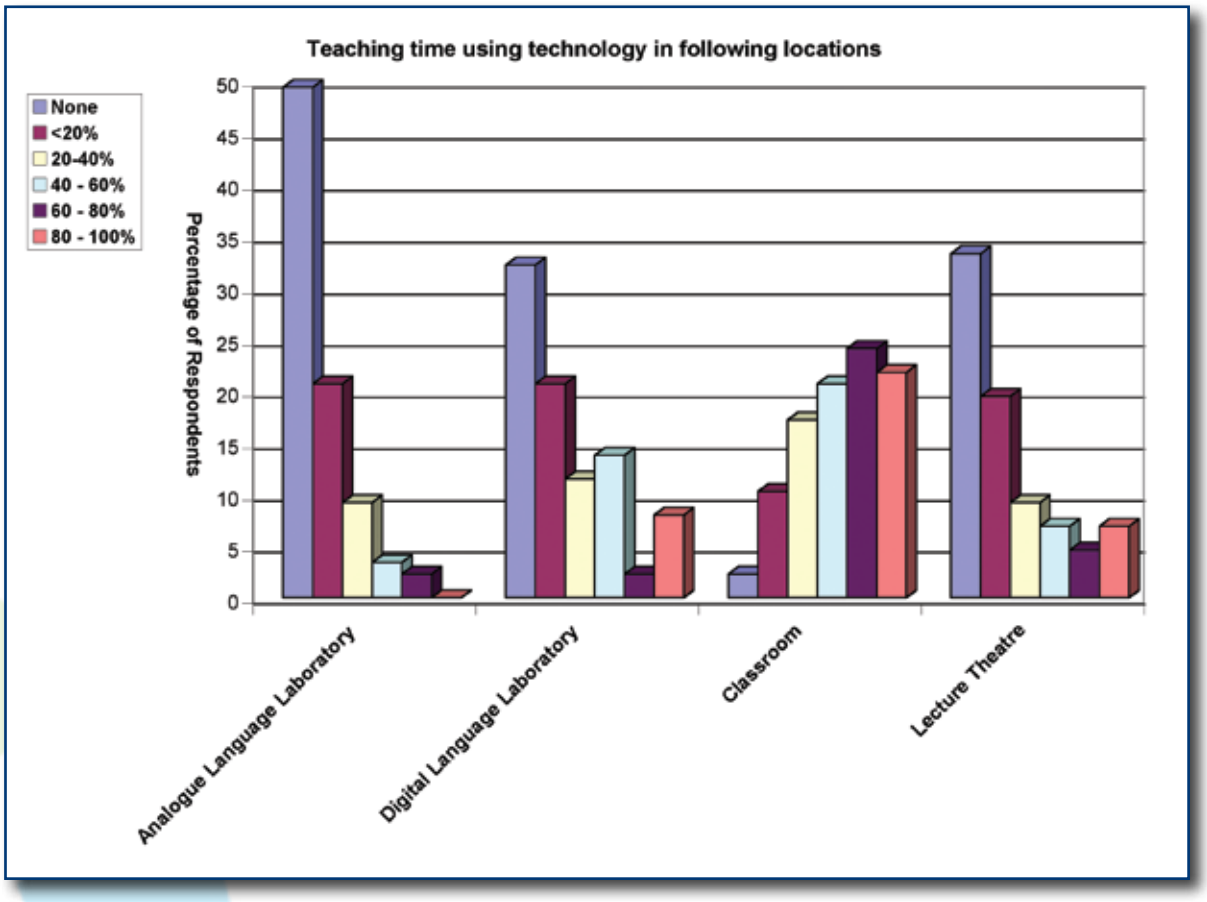
In general, therefore, CALL appears to be primarily used for the development of some productive skills, including grammar and probably spelling, and for receptive skills including both reading and aural comprehension. There is no strong evidence here for anything but a minority interest in the use of CALL to support the development of cognitive skills such as the active construction and negotiation of meaning. While teachers have willingly embraced the computer as a means of delivering multimedia, they seem to prefer approaches that allow the computer to both deliver content and mark and provide electronic feedback on student work.

Teaching Locations and Environments

The questionnaire asked if the respondent's institution had analogue and/or digital language labs. The majority (62.1%) replied that they have at least one analogue and 69% said that they have a digital lab, with a considerable number having two or more such labs. Of the 62 institutions represented by the respondents, 43 have at least one analogue lab and 44 have a digital lab. This suggests that the sector has moved a considerable way towards upgrading its old analogue stock, but that there is a considerable analogue legacy which may be replaced over time as the equipment becomes obsolete or irreparable. However, there is some doubt as to precisely how respondents define a digital language lab. In many cases, they are doubtlessly referring to specialist language labs with classroom management functionality such as those systems supplied by Sony, Robotel, Sanako, and Melissi, but in other cases respondents may simply have corporate, faculty or dedicated departmental computer labs in mind in which language learning (and not necessarily teaching) takes place, perhaps alongside other activities.

The questionnaire asked what proportion of their teaching time in each named location was spent using technology. The answer 'none' is ambiguous as it could indicate either that the respondent does not use those facilities or that he/she does not use technology there. However, in the case of analogue and digital labs, the distinction is hardly relevant as either the respondents do not use a lab or they are using labs as an ordinary teaching room without using any of the available technology.

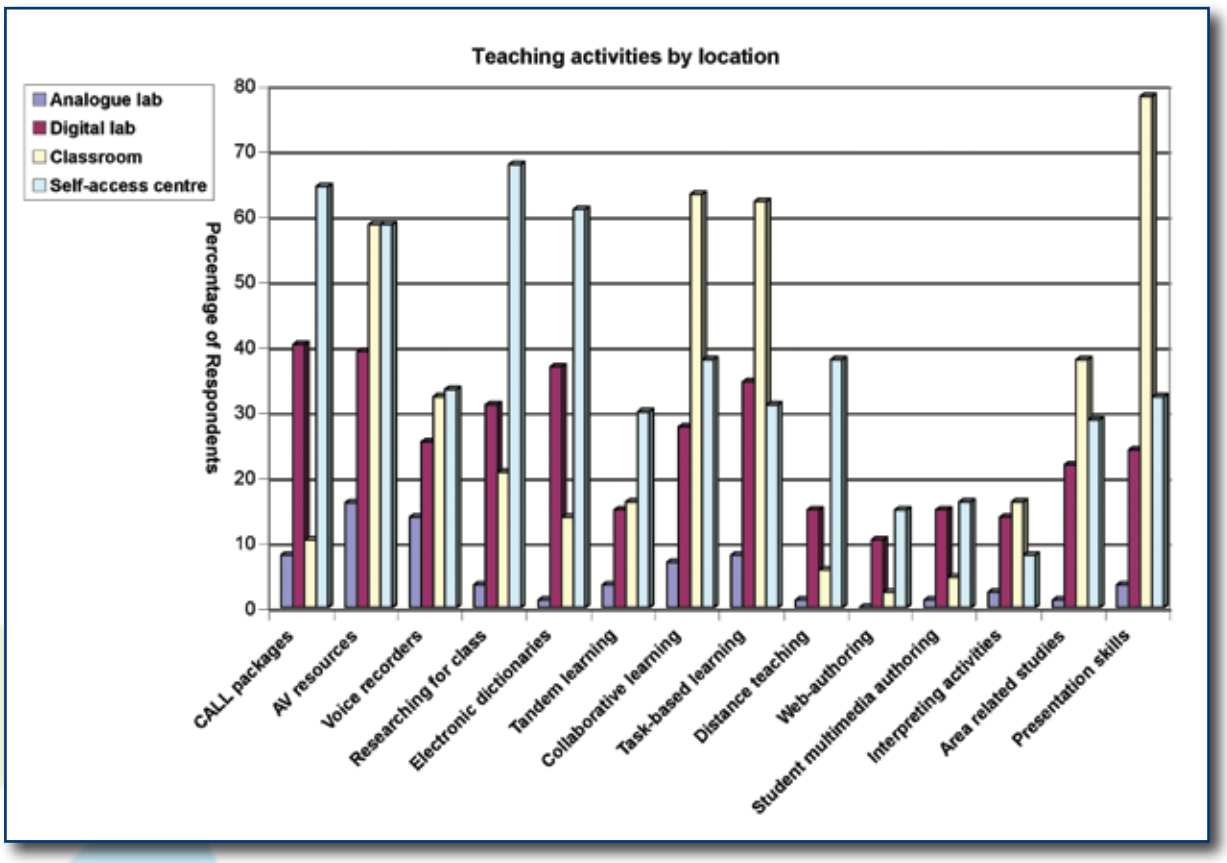
The most noteworthy feature of this study is that an enormous amount of technology is used in the ordinary classroom. Indeed, the classroom, rather than digital or analogue labs, is where most use is made of technology. Nearly a quarter of respondents use technology most of the time (over 80%) in the classroom and very frequent use (60-80%) is made of technological aids by a further 24.1% of respondents. Overall, almost everyone makes some use of technology in the classroom and only 12.5% spend less than 20% of their time employing technology.



The use of technological facilities in digital labs is equally interesting. Of those who make some use of multimedia facilities provided by a digital lab, a massive 52.9% said that they used the technology for less than 20% of their teaching time. A quarter (24.1%) said they use the technology for more than 40% of their time. This may suggest progressive forms of blended learning are being employed in which the teacher teaches in the lab and uses the technology to assess student understanding or allow them to practice what has just been taught, but it is more likely to reflect a concentration by many teachers on a limited range of activities with most emphasis being placed on the use of CALL (see below).

The use of analogue labs for their intended purpose is significantly lower than their more modern cousin. Only thirty-one respondents said that they made some use of technology in analogue labs and half of these respondents use the technology for less than 20% of their time; a sizeable proportion (9.2%) use the technology for more than 20% but less than 40% of their time and only a tiny minority use it any more than this. This indicates that a significant number of teachers still find analogue labs of considerable use in their teaching, but that overall this number is low and probably will continue to fall. The majority of teachers clearly prefer to bring technology into the classroom rather than make use of analogue labs.

Respondents were asked to identify the activities involving technology they set for students and to state where these activities took place. Self-access centres are very commonly used by students for a range of activities including research for class work (67.8%) and accessing CALL packages (64.4%), audio-visual resources (58.6%), and electronic dictionaries (60.9%). Other important activities take place in self-access centres such as the use of recording tools (33.3%), tandem learning (29.9%), collaborative learning (37.9%), task-based learning (31%), area studies (28.7%), development of presentation skills (32.2%) and distance teaching/learning (37.9%). It is clear, therefore, that self-access centres are very important foci for learning and that technology is key to their success and viability.



As we have already seen, there is a very high degree of technology use in the classroom and this question sheds some light on the purposes to which that technology is put. Audio-visual materials are heavily used in the classroom, with 58.6% of respondents saying that they used audio-visual aids in their classroom teaching. Teachers appear also to be very reliant on technology to help cultivate students' presentational skills – 78.2% report that they use technology for this purpose – and 62.1% say they use technology in the classroom for task-based learning. Collaborative learning is also prominent and 63.2% of teachers say they use technology to enhance these lessons. Recording tools are also widely used in the classroom (32.2%), as is the use of technology for area studies work (37.9%), interpreting (16.1%) and research (20.7%). Less common but significant technology-enhanced activities include the use of electronic dictionaries (13.8%) and tandem learning (16.1%). The range and frequency of activities described here suggests that teachers have access to a large array of technologies in the classroom, including TV/DVD/VCR and recording tools (audio-cassette/solid state). A large proportion of classrooms appear to be equipped with PCs as evidenced by the frequency of technology-based activities such as research and the use of electronic dictionaries. In other words, many of these are hybrid classrooms combining features of the traditional languages classroom with some of the functionality of a computer lab or digital language lab.

Digital labs were not available to all respondents in their institution, so the response rate for this question is comparatively low. The most popular activity carried out in digital labs is the use of CALL packages (40.2%). It is not clear from the survey how these are used but it is likely that in most cases students work independently on the material either on their own or under the supervision of a teacher. Other popular activities include the use of electronic dictionaries (36.8%) and audio-visual materials (39.1%), task-based learning (34.5%), research (31%), development of presentation skills (24.1%), collaborative learning tasks (27.6%) and recording, presumably for the development of pronunciation (25.3%). It is noteworthy that nearly as many teachers are using audio-visual materials (39.1%) as use CALL packages (40.2%), indicating that the multimedia functionality of the labs is being exploited, and that it is not being impeded by the need to digitise materials especially for use in the lab.

As we have seen, analogue labs are widely available in institutions but the responses to this question clearly indicate that very little use is made of the available technology. The most popular activity carried out in language labs is the use of audio-visual resources, but only 16% of respondents said they used these. Analogue labs are used for allowing students to record themselves by 13.8% of respondents, and language learning packages (presumably not CALL) by 8%. There is no significant use of analogue labs for any other purpose and it is doubtful whether they have a long-term future in face of competition from digital labs and well-equipped classrooms.

If we now look at the activities carried out in the three types of teaching facility (analogue lab, digital lab, and classroom) certain trends and preferences begin to appear. Four times as many teachers use language learning packages (usually CALL) in digital labs as in ordinary classrooms, even though only 69% of all respondents have a digital lab. The digital lab, therefore, is clearly seen as the most appropriate place to use CALL in teaching, although it should be noted that a higher percentage of respondents (64.4%) state that their students use CALL/language learning packages in a self-access centre, indicating that many teachers still regard CALL as primarily for private study rather than as a teaching tool. If CALL is to be more widely used, therefore, to engage students in their own learning, teachers must have access to a digital lab.

As observed above, teachers are more likely to use audio-visual materials in the classroom than in the digital lab, even when we allow for the fact that 30% of respondents do not have a digital lab. Recording tools, which are generally used to allow students to monitor their own pronunciation, are more commonly used in classrooms than in digital labs (32.2% as against 25.3%) but when one allows for the availability of labs there is no significant difference in usage. As suggested above, there is a clear underuse of audio-visual facilities in digital labs. Coupled with a heavy reliance on CALL packages, there is a danger that digital labs are being used for what is most easily done in them and that, as a result, their functionality will be under-exploited and locked into primarily text-driven exercises.

There is only limited evidence of the promotion of social learning in labs. While 27.6% of teachers report that they set collaborative tasks in a digital lab, this is poor by comparison with the classroom (63.2%), and although task-based learning is employed by 34.5% of teachers in a digital lab, this figure is significantly lower than the 62.1% usage in the classroom. Nevertheless, there is evidence of other forms of innovative practice taking place in digital labs. Ten percent of teachers get their students to create materials for the web in labs and 14.9% get students to create multimedia materials as against 2.3% and 4.6% respectively in classrooms, and the use of electronic resources such as dictionaries is much more common in labs (36.8% against 13.8%).

There is a real issue here with regards to staff development as the installation of labs outpaces the provision of training. We have already seen that respondents demonstrate a very high use of established technologies such as audio-cassette, TV, and VCR/DVD, and it is these technologies, alongside PCs, that are almost certainly being widely employed in the classroom. There is some reluctance among teachers to abandon trusted methods, but a result of this might be a lost opportunity to enrich the learning experience for students. Staff need both the technical support and the technical training to enable them to master the technology, and they also need the pedagogical support and training to introduce them to the range of possibilities and techniques and so allow them to teach effectively and creatively in the digital lab.

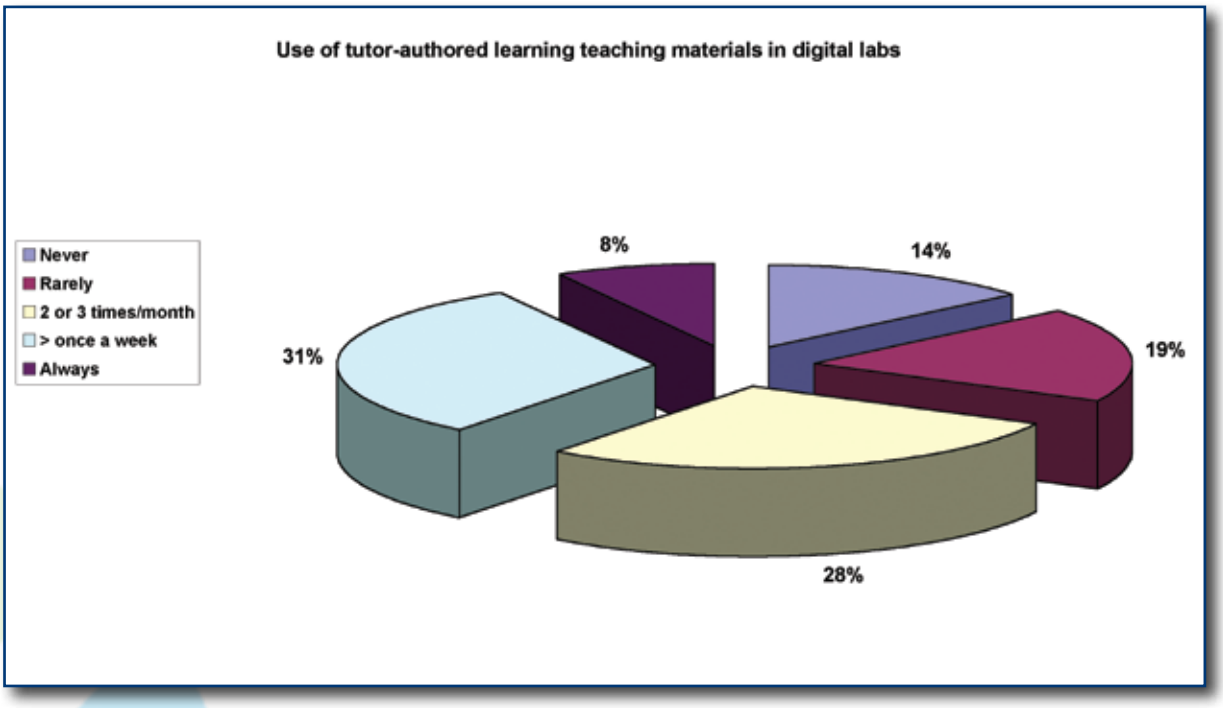
The survey clearly indicates the central role of technology in classroom teaching and in self-directed learning in self-access centres. The variety and frequency of uses, as well as the range of skills developed, is impressive, and it is noteworthy that many of the classrooms appear to be hybrid facilities with easy access to a range of technologies including PCs. Digital labs have established themselves as key locations for the use of CALL, but there is some evidence that their full potential is not being exploited. It is a matter of concern that audio-visual material is not being fully utilised and is lagging behind classroom practice. Even recording tools are used as commonly or more commonly in the classroom than in digital labs. Although there is good evidence of attempts to engage students in social learning, such as collaborative tasks and task-based learning, the figures are significantly lower than for the same activities in the ordinary classroom. There is clearly a small band of advanced users who are getting students involved in a whole range of activities including the authoring of web and multimedia materials, but their numbers are limited.

Development of In-House Language Learning Software

The survey asked how frequently participants made use of digital language learning materials, such as web-based exercises and digitised audio or video materials, which they had developed themselves in-house. It is striking that the vast majority of respondents have developed their own digital material. Nearly forty percent used their own materials at least once a week, and a further 28% used home-grown materials at least twice a month. Just under a fifth (19%) said they rarely used their own materials (two or three times a year), and 14% said they never did. (Whether the latter had never developed any or they had but had ceased to use them is not clear.)

The responses to this question clearly demonstrate that a very high proportion of teachers spend a considerable amount of time developing their own digital materials: two thirds are using their own materials at least twice a month. We cannot quantify the amount of material that is developed in this way, but it clearly substantial given the large number of teachers who use such material weekly. Ironically, therefore, there is probably far more home-generated digital material in use in UK Higher Education than there is commercially available software.

The need to create digital material does not seem to be an obstacle to its use in teaching, although the results may mask considerable variations in the nature of this material which may include products as diverse as Word-based questionnaires to be completed by students, notes delivered by a VLE, digitised video clips played on a data projector in the classroom, and interactive quizzes. In the absence of a common bank of high-end multimedia and interactive materials from which teachers can pick and choose, teachers are unlikely to diversify into some of the more interesting and challenging arenas described above. The sharing of this material is problematic given potential copyright issues, intellectual property rights, quality, and discoverability, so the creation of a bank of resources would have to be managed centrally.



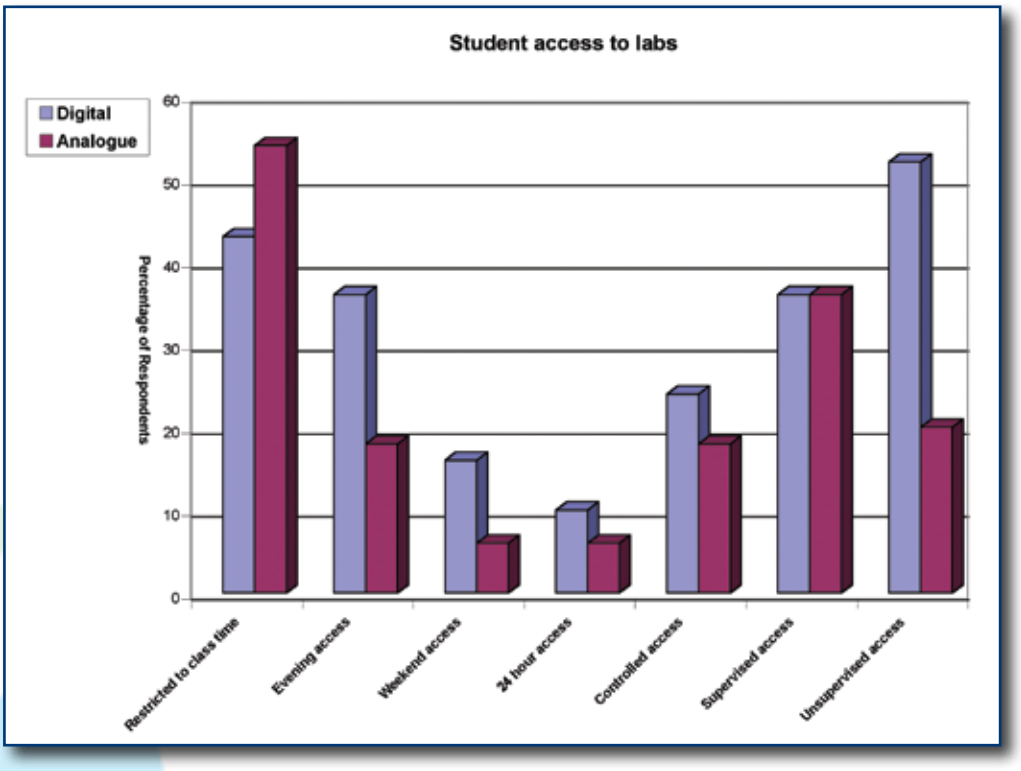
Student Access to Language Learning Laboratories

The questionnaire asked about the level of student access to both analogue and digital labs. In the following analysis we have counted only those respondents who have a lab and answered some part of the question.

Access to both types of lab is highly restricted, although digital labs have a greater degree of flexibility. Over half (54%) said their analogue lab was accessible only during class time while 43% said their digital lab was similarly restricted. Over a third (36%) said the digital lab was also open in the evenings, compared with just 18% for analogue labs, and 16% said there was weekend access to their digital lab compared with just 6% for analogue labs. Twenty-four hour access is rare for both digital (10%) and analogue (6%) labs. Therefore, 62% of respondents stated that their digital lab had some form of extended opening compared with just 30% for analogue labs.

Security is doubtless an issue, but 52% said that unsupervised access to their digital labs is allowed (compare 20% for analogue labs). Supervised access to both types of facility is allowed in 36% of cases, and controlled access (for example, by swipe card) is allowed in 24% of digital and 18% of analogue labs. Thus, teachers and managers appear to be aware of the potential of digital labs to double as private study/self-access areas. As all materials are stored digitally rather than in hard copy the main security issue is related to the computer equipment itself. Many institutions have evidently factored this into their planning and have employed either controlled or supervised access. There is a clear cost benefit to the institution as it gets more use out of the plant, and to students who have extended access to learning materials in an environment with which they are already familiar from class.

The need for out-of-hours access raises an important issue relating to the integration of digital labs into the teaching environment. Planners and managers need to recognise that digital labs are multifunctional teaching and learning spaces and can easily double as self-access study areas with ready-made access to banks of learning materials. Some institutions may choose to install security systems such as swipe cards or PIN access, but security may also be increased by careful consideration of location and existing supervision arrangements.

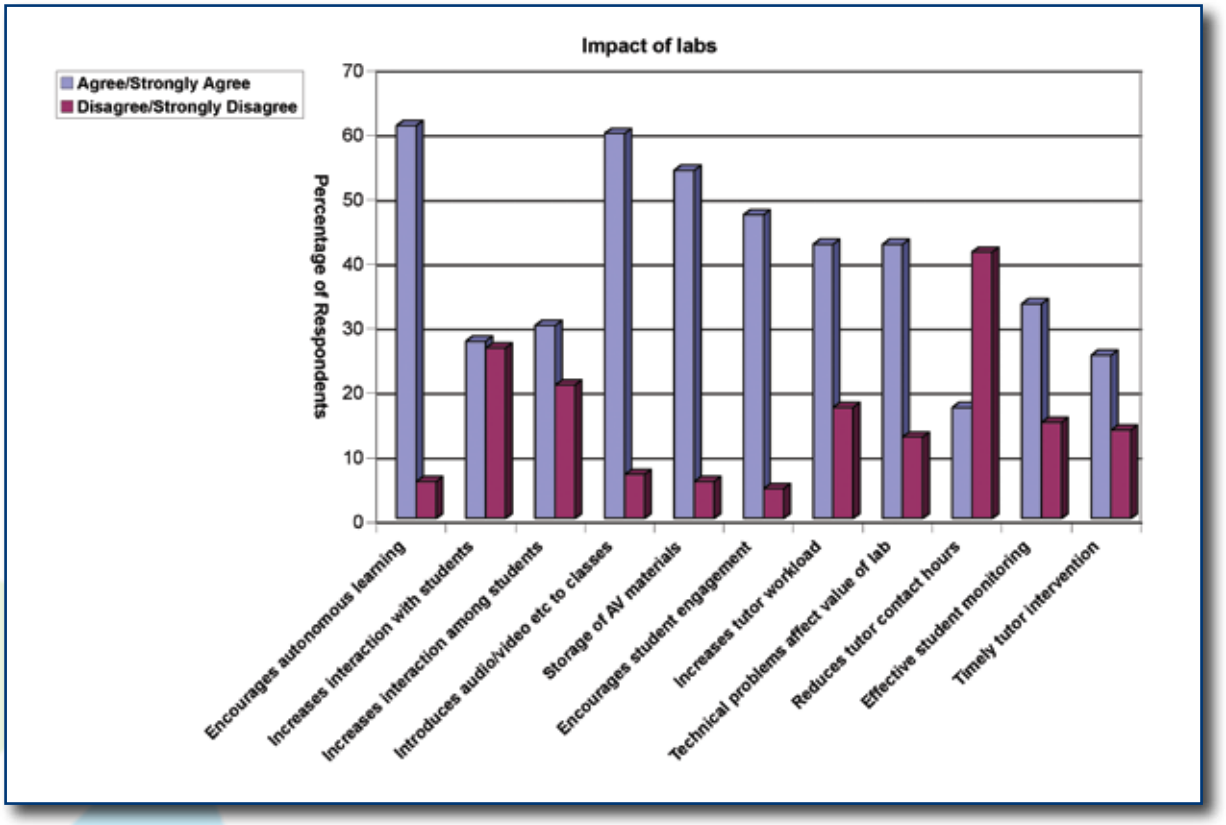


Impact of Digital Learning Laboratories in Teaching

The final question asked teachers how they thought digital learning labs impacted on their teaching. There is a general consensus that labs promote independent learning among students: 60.9% agreed or strongly agreed with the statement that labs encourage autonomous learning with only 5.7% disagreeing. Respondents were slightly more equivocal about the extent to which the labs encourage student engagement: 47.1% agreed or strongly agreed that this was the case but 26.4% declared themselves undecided.

There was some support for the statement that labs increase teacher-student interaction – 27.5% either agreed or strongly agreed – but 26.4% either disagreed or strongly disagreed and the remainder were undecided (26.4%) or did not answer the question. Support for the suggestion that labs increase interaction among students was equally equivocal: 29.9% percent agreed or strongly agreed with the statement, but 20.7% disagreed or strongly disagreed and the remainder were undecided (27.6%) or did not answer the question. Therefore, there is a sizeable minority of teachers who believe that digital labs impede social interaction among students and between students and teachers, and an even larger proportion who are undecided. We have already seen that labs are heavily used for CALL work and that social activities are pursued by only a minority of teachers. This is potentially a very serious problem for digital labs, like their analogue antecedents, and there is a danger that they will become social graveyards unless this issue is tackled through dissemination of good practice and staff development.

Digital labs are broadly seen as effective tools for the storage, provision and presentation of audio and video to students. 59.7% of respondents agreed or strongly agreed with the statement that labs are an effective tool for introducing audio, video and other media to their classes and 54% agreed that digital labs were useful place to store and provide audio-visual material. There is little opposition to these views although 11.3% and 16.1% respectively were undecided. Given the heavy use of technology in the classroom witnessed above, it is likely that many teachers are content to manage their own materials and



[1]The actual number of labs with restricted opening is in fact slightly lower as some respondents who answered affirmatively to this part of the question also replied that their lab was open in the evening.

retain control over it. More research would be needed to determine if, for example, there are local issues such as sharing of personal material, inadequate technical support or restrictive opening hours that leaves teachers cautious about centralising their resources and making them available to students. It might also be the case that those teachers already have a well-established open-access centre where materials are stored for student use, or that they make materials available to students online so that they can access them anywhere.

It is somewhat surprising, given the declared purpose of classroom management systems that are at the heart of digital language labs, that only a third of respondents agreed or strongly agreed that labs provided them with facilities for effective monitoring or supervision of students. Nearly as many (29.9%) were undecided, and 15% seemed to think that labs do not help monitoring. Another feature of digital labs is the ability to intervene when a student encounters a problem with their work or requests assistance, yet only 25.3% of respondents agreed that this feature impacted on their teaching. Another 36.8% were undecided on this issue, while only 13.7% disagreed. Further research would be required to determine if management systems have been installed in these labs and whether they are being used for monitoring, but it is possible that these features have been rejected by some teachers. Anecdotally, it seems that some teachers use the classroom management system for the delivery of materials but prefer to walk round the room to observe how students are performing.

The idea that computers would one day take over from teachers is long dead and this survey confirms that teachers believe that IT increases their workload rather than decreases it. A large minority of respondents (42.5%) agree or strongly agreed with the statement that using a digital language lab increased tutor workload, while 20.7% were undecided. Nevertheless, a sizeable proportion (17.2%) did not believe that the teacher's workload had increased because of digital labs. As we have seen, a very large number of teachers develop their own digital materials anyway, whether for the lab, the classroom, online delivery or for a self-access centre, and it may be the case that developing materials for the lab does not require any additional effort. On the other hand, as a large proportion of teaching in digital labs involves the use of CALL, the amount of preparation and engagement with students may be minimal, and as we shall see, a substantial number of respondents believe that labs reduce their contact hours.

A related question concerns the impact of labs on their contact hours. 17.2% of respondents agreed or strongly agreed that the use of digital labs had led to a reduction in their contact hours. We may surmise that these tutors have reduced their teaching hours by getting their students to work independently on CALL materials in the labs. However, a substantial number of respondents (41.3%) disagreed or strongly disagreed that using labs led to a reduction in tutor contact hours. Indeed, nearly a fifth (19.1%) strongly disagreed with the statement, suggesting that their contact hours had actually increased. This seems to be the more general pattern, with the new opportunities offered by digital labs being seized on by staff to develop skills, such as pronunciation, that are more difficult to develop with the technology. It may well also be the case that staff are using CALL in their teaching rather than leaving students to work on it on their own.

The questionnaire asked if technical problems impaired the effectiveness of their teaching. 42.5% either agreed or strongly agreed: for the 16.1% who strongly agreed with the statement, we may assume that the technical problems they encountered had a serious detrimental effect on at least one class. Of course, the technology is relatively new, and it would be unusual for teachers not to experience serious teething problems. Most teachers, for example, have encountered disruptive or catastrophic failures of a data projector and even overhead projectors break and whiteboard markers run dry. Nevertheless, there are more things to break in a digital lab (each student has a computer that can go wrong), and there may be login problems with individual students. Good technical support should help to alleviate or eliminate most problems, but teachers need to be trained in how to solve simple problems and, more importantly, how to circumvent other more serious problems. For example, a student whose computer crashes may be advised to take another seat or share with another student rather than attempt to reboot. Catastrophic failures of the teacher's machine or the networking can be very disruptive, but the simple presence of a whiteboard in the room may at least allow the class to continue.

Conclusions

It is clear from this survey that technology is nearly ubiquitous in language teaching and that classrooms are heavily armed with an array of technologies. Many teachers are heavily engaged in technology use, using a wide range of technologies for a whole variety of purposes and tasks, although the bulk of teachers are limited to using well-established, familiar technologies such as TV, video, audio-cassette and PCs. Newer technologies, such as the MP3 player, are not as widely used as more traditional technologies, perhaps because of teachers' lack of familiarity with them but also perhaps because of fitness for purpose. Large numbers of teachers are engaged in developing their own digital resources so that the lack of suitable materials does not seem to be impeding adoption of digital technologies.

Email is now almost universal as a means of communicating with students and VLEs are well established for both campus-based and distance teaching. It is noteworthy that VLEs are used nearly as commonly to provide multimedia resources to students as they are for distribution of notes and coursework, indicating quite sophisticated usage for the sector. VLEs and the Web are also frequently used for chartrooms.

Computer-assisted language learning software (CALL) is heavily used to practice language skills, most commonly for grammar, pronunciation, and aural and reading comprehension. Computers are used by some to develop oral skills, but it is likely that teachers are more reliant on other methods to promote fluency and accuracy. In general, CALL seems to be used to practice certain productive and receptive skills that are easily delivered and marked by computers.

The majority of UK HE institutions appear to have digital labs of some description, although there may be a great deal of variation between these ranging from fully-fledged classroom management systems to computer suites. Classrooms appear to be very well equipped and in some cases may approach the broad definition of a digital lab. It might be better, therefore, to view teaching and learning spaces as inhabiting a spectrum with well-equipped languages classrooms at one end (with computers, interactive whiteboards, and other digital resources) and digital labs with integrated classroom management systems at the other.

It is a cause for concern that over half of teachers report little or limited use of the technology they find in digital labs. This clearly indicates that the labs are being used as ordinary teaching rooms or that use is made only of a very limited range of the functionality offered by the labs. It is also clear that CALL is very heavily used in digital labs, and there is a danger that labs will come to be used for supervised practice rather than for teaching. While there is evidence of some innovative teaching in labs, there is little reported promotion of social learning compared with the ordinary classroom. These factors point toward individualistic, fragmented learning patterns, and indeed a sizeable proportion of respondents believe that labs inhibit social interaction. Given that teachers report heavy usage of technology in ordinary classrooms, there is clearly a pressing need for institutions to provide training in use of the labs if they are not to see these valuable resources wasted.

The survey shows that UK HE languages teachers are at ease with a wide range of information technologies including email, VLEs and the Web, and many or most have developed their own digital or multimedia materials to use in their teaching. Digital labs are widely available, and off-the-shelf or self-authored resources are common. Teacher reaction to digital labs is generally very positive with very strong approval for the opportunities they offer to promote autonomous learning, but there are problems of perception, particularly with regard to social interaction, classroom control, and reliability that need to be addressed by manufacturers and staff developers.

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